
ED RICHMOND, UBC

Littlewood-Richardson coefficients and tight fusion frames

A tight fusion frame is a sequence of orthogonal projection matrices which sum to a scalar multiple of the identity. To any such sequence, we can associate a weakly decreasing sequence of positive integers given by the ranks of these projections. The question we address is the following:

For which sequences of positive integers do tight fusion frames exist?

In this talk, I will discuss joint work with K. Luoto and M. Bownik where we explore this problem. In particular, we give a combinatorial characterization in terms of nonvanishing Littlewood-Richardson coefficients. This connection between algebraic combinatorics and frame theory yields several interesting results in both fields of mathematics.